

WHAT IS CLAIMED IS:

1. A method of controlling an internal combustion engine of a vehicle in which an exhaust purifying catalyst is provided in an exhaust system of the internal combustion engine, the method comprising the steps of:

controlling burning of fuel to operate the internal combustion engine; and

injecting fuel into the internal combustion engine during a moving state of the engine, without causing the fuel to be burned, before a normal operation of the engine by fuel being burned.

2. The control method according to claim 1, wherein the step of injecting fuel includes injecting fuel into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, when a predetermined condition is satisfied while the vehicle is running.

3. The control method according to claim 2, further comprises stopping burning of the fuel by cutting a fuel supply to the internal combustion engine.

4. The control method according to claim 1, wherein the step of injecting fuel includes injecting fuel into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, when the vehicle starts to be driven by a motor after being driven by the internal combustion engine.

5. The control method according to claim 1, wherein the step of injecting fuel includes injecting fuel into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, before the vehicle starts to be driven by the internal combustion engine and after being driven by a motor.

6. The control method according to claim 1, further comprising not injecting fuel into the internal combustion engine that shifts to the moving state based on a temperature of the exhaust purifying catalyst.

7. The control method according to claim 1, wherein the step of injecting fuel includes injecting fuel into the internal combustion engine that shifts to the moving state and not igniting the fuel.

8. The control method according to claim 1, further comprising the step of:
driving the internal combustion engine by the burning of the fuel when the speed of the internal combustion engine has become equal to, or greater than, a predetermined speed.

9. The control method according to claim 1, further comprising not injecting fuel into the internal combustion engine that shifts to the moving state when the speed of the internal combustion engine is equal to, or greater than, a predetermined speed.

10. The control method according to claim 1, wherein the step of injecting fuel includes injecting fuel for a predetermined amount of time into the internal combustion engine that shifts to the moving state.

11. A control system for controlling an internal combustion engine of a vehicle in which an exhaust purifying catalyst is provided in an exhaust system of the internal combustion engine, the system comprising:

a controller that controls burning of fuel to operate the internal combustion engine, wherein the controller causes fuel to be injected into the internal combustion engine during a moving state of the engine, without causing the fuel to be burned, before a normal operation of the engine by fuel being burned.

12. The control system according to claim 11, wherein the controller causes the fuel to be injected into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, when a predetermined condition is satisfied while the vehicle is running.

13. The control system according to claim 12, wherein the controller causes burning of the fuel to be stopped by cutting a fuel supply to the internal combustion engine.

14. The control system according to claim 11, wherein the controller causes the fuel to be injected into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, when the vehicle starts to be driven by a motor after being driven by the internal combustion engine.

15. The control system according to claim 11, wherein the controller causes the fuel to be injected into the internal combustion engine that shifts to the moving state, without causing the fuel to be burned, before the vehicle starts to be driven by the internal combustion engine and after being driven by a motor.

16. The control system according to claim 11, wherein the controller prohibits the fuel from being injected into the internal combustion engine that shifts to the moving state based on a temperature of the exhaust purifying catalyst.

17. The control system according to claim 11, wherein the controller causes the fuel to be injected into the internal combustion engine that shifts to the moving state and not be ignited by an ignition device.

18. The control system according to claim 11, wherein the controller causes the internal combustion engine to operate by burning the fuel when the speed of the internal combustion engine has become equal to, or greater than, a predetermined speed.

19. The control system according to claim 11, wherein the controller does not inject fuel into the internal combustion engine that shifts to the moving state when the speed of the internal combustion engine is equal to, or greater than, a predetermined speed.

20. The control system according to claim 11, wherein the controller causes fuel to be injected for a predetermined amount of time into the internal combustion engine that shifts to the moving state.

21. A control system for controlling an internal combustion engine of a vehicle in which an exhaust purifying catalyst is provided in an exhaust system of the internal combustion engine, the control system comprising:

means for controlling burning of fuel to operate the internal combustion engine;

and

means for injecting fuel into the internal combustion engine during a moving state of the engine, without causing the fuel to be burned, before a normal operation of the engine by fuel being burned.